District 2 Fire Station
School Street
MEP Condition Report
&
Cost Estimate

Town of Acton

South Acton, Massachusetts

September 30, 2004

G&M Project No. 5334

GANTEAUME & McMULLEN
Architects & Engineers

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Architects & Engineers

Introduction

The Town of Acton has requested that Ganteaume & McMullen review the mechanical, electrical and plumbing (MEP) systems of the District 2 Fire Station and provide an estimate of cost for all recommendations. This building is in the South Acton Historic District, which could impact renovation plans.

This facility was previously reviewed by Butler Bennett Architects and WV Engineering Associates in September 5, 2001 which described general building conditions and recommendations with no cost estimates.

The Public Safety Facility, which will house Dispatch and Fire Administration, is now under construction and will be completed in 2005. A new North Acton District Fire Station is called for in the Long Term Capital Plan for 2008. When that facility is completed, the new space created will be used as "swing space" to relocate staff and apparatus, so that renovations can be performed in unoccupied facilities.

The issue of handicap accessibility to the living quarters on the second floor should be examined as the time for renovation approaches. Earlier contacts by the Town of Acton with the Massachusetts Architectural Access Board seemed to indicate that HP access to the living quarters, occupied by staff required by job description to be able bodies, would not be required. This presumption should be verified.

Executive Summary

District 2 Fire Station building has been well maintained. The current concerns with the station can be contributed to the age of the building and condition of the support systems.

The main complaints have been:

1. Too cold in the winter, difficult to control temperature in individual rooms.
2. Too hot in the summer, spot cooling by window units. AC units have limited temperature control and are noisy when sleeping.
3. Inadequate ventilation in the apparatus bay, diesel fume smell on second floor.
4. Inadequate ventilation for mechanical room, bathroom and kitchen.
5. Plumbing fixtures original 1960's, difficult to clean.
6. No sprinkler protection.
7. Electrical distribution panels original 1960's, inadequate working clearances.
8. Inadequate fire detection and alarm system.
9. Inadequate number of outlets. Must use a large number of extension cords.
10. No security system

Founded in 1909
Incorporated in 1960

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11. Inadequate tel/data and cable TV systems, exposed wiring,.

Based upon the above stated existing conditions and the recommended repairs / renovations indicated in the body of this report, the following represent the estimated project costs, expressed in current (August 2004) dollars:

COST SUMMARY			SQFT = 7,141	
DESCRIPTION			SUBTOTAL COST	COST/SQFT
M	HVAC		$139,000	$19.47
P	PLUMBING		$36,050	$5.05
FP	FIRE PROTECTION		$15,000	$2.10
E	ELECTRICAL		$244,240	$34.20
A	ARCHITECTURAL		$159,350	$22.31
SUBTOTAL - SUBCONTRACTORS			$593,640	$83.13
GR	GENERAL REQUIREMENTS	10% SUBTOTAL	$59,364	$8.31
CF	CONTRACTORS FEE	10% SUBTOTAL	$65,300	$9.14
DF	DESIGN FEE	12% SUBTOTAL	$86,197	$12.07
C	CONTINGENCY	10% SUBTOTAL	$80,450	$11.27
TOTAL ESTIMATED CONSTRUCTION COST (AUGUST 2004)			$884,951	$123.93
Note: The above estimated construction costs reflect current August, 2004 pricing and are based upon conceptual square foot values and sizing without the benefit of formal design. Currently, it is recommended that a normal escalation factor of 12.5% (exclusive of material spikes) be applied to the Total Current Estimated Cost to reflect construction in mid 2007.				
TOTAL ESTIMATED CONSTRUCTION COST (JUNE 2007)			$995,570	$139.42

General Building Description

The Town of Acton, District 2 Fire Station, on School Street is a 7,141 gross square foot two story masonry building built in the early 1960's and located on the south side of Acton.

Building has conventional wood framed flat roof. Lower and high roofs are covered with EPDM. (Repaired and re-roofed in 1997). The first floor extends beyond the second story on the building's north side. The building's exterior walls are concrete block with brick veneer. The second story walls are framed with wood studs, sheathing and exterior clapboards. A steel fire escape servicing second floor is located on the east side of the building. The north elevation of the building has two 12'-0" wide roll-up doors and three windows at the second story. The rear overhead insulated metal door are recently replaced. The south elevation of the building also has two 12'-0" roll-up deteriorated, un-insulated wood doors, the main entrance door and five windows at the second floor. The main entrance door was entirely replaced in winter of 2003.

Interior first floor walls typically concrete block. Interior walls partitions are typically wood studs with gypsum wallboard. The ceilings throughout the building are metal lath and plaster hang from the wood joists. 2' x 4' wood framed soffit is located above the stairs. Building is not ADA accessible.

The first floor space (3,200 sq ft. or 50'-0" x 78'-0") is divided into a large Apparatus Bay, Town Vault, Storage Room, Mechanical Room, Rest Room and Fire Alarm Room

The Apparatus Bay consist of two double length drive-thru bays, suit storage on outside wall, washer recessed in the wall.

Storage Room for equipment, supplies, washer, work bench.

Mechanical Room houses the boiler, air horn with compressor, gas water heater, back-up generator with ATS, electrical meter and panels, gas and water meter.

Public Foyer

Fire Alarm Room – desk, fire alarm equipment

Ladies Toilet

Janitor Room.

Vault is used for storage, portable de-humidifier, shelves.

The second floor (2,000 sq ft. or 40'-0" x 50'-0") is separated into a Day Room, Office Area, Bunk Room, Kitchen and Bath/Toilet Room.

The Day Room consists of TV, lounge chairs, desk with computer.

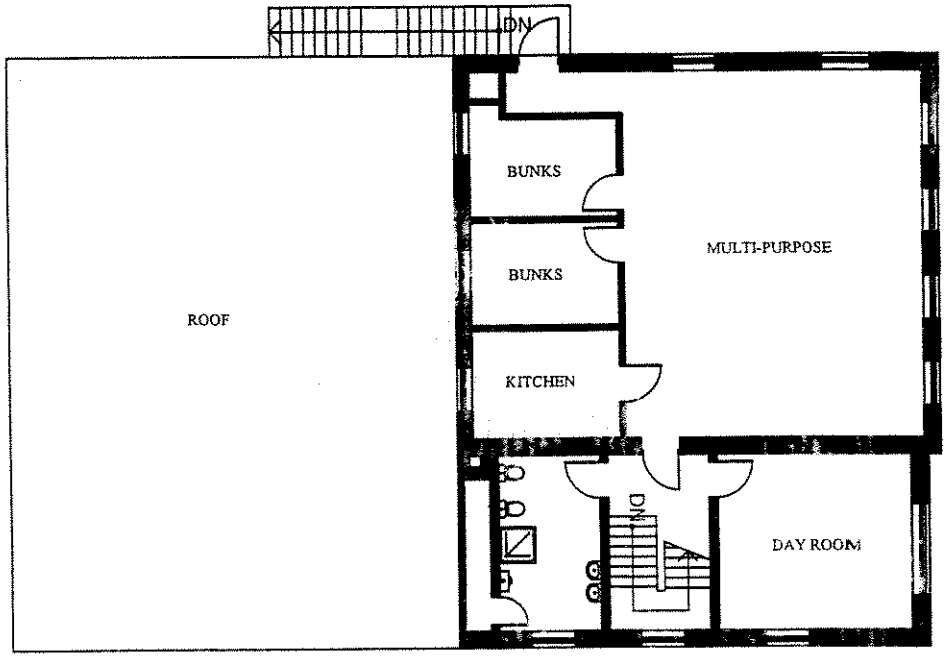
Multi Purpose Room has a pool table, folding tables and chairs.

Kitchen has appliances including refrigerator, coffee maker, toaster, microwave oven

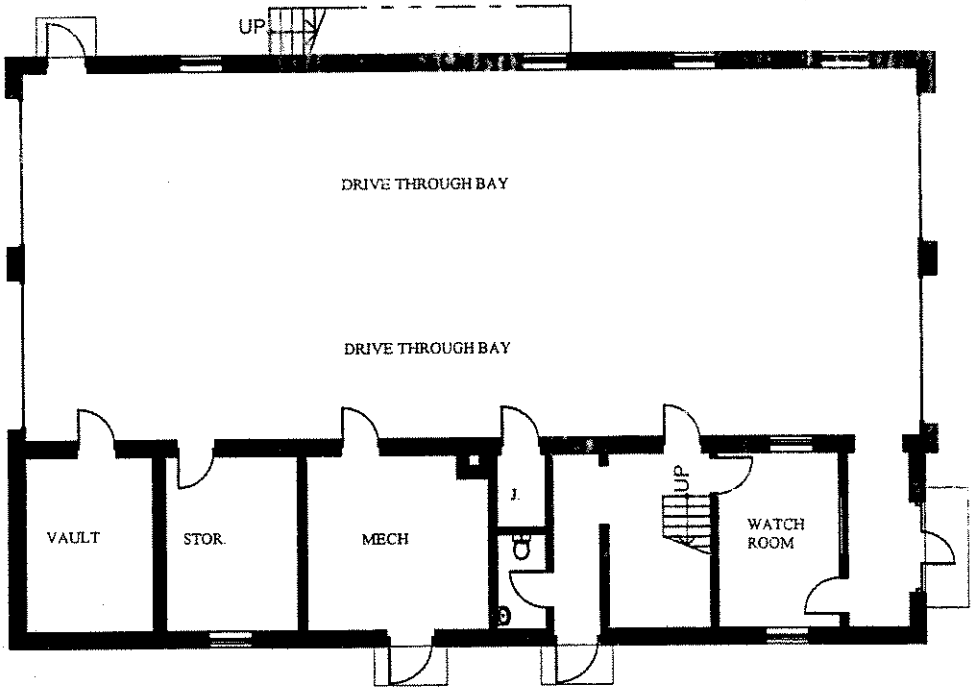
Second exit to fire escape.

Bath/shower room has two toilets, one shower, one sink, access is through the stairwell.

Bunk Rooms has beds and lockers.



SECOND FLOOR



FIRST FLOOR

District #2 Fire Station - South Acton

Mechanical Systems

The following is a description of the buildings existing Mechanical Systems with their corresponding recommended upgrades

Heating Systems (Existing)

The facility is heated with a natural gas fired hot water boiler. The boiler is located in the first floor Mechanical Room. There appears to be one circulating pump serving two heating zones. Heating hot water is distributed to terminal heating equipment (finned radiation, unit heaters, and convectors) located throughout the facility. An in-slab heating system has been abandoned in place.

The heating system appears to be original to the facility. The boiler is an HB Smith Century II having a gas input rating of 552,000 BTUH.

Horizontal unit heaters (2) provide heat for the Apparatus Bay.

The Communications Center is provided with a cabinet heater (located below the window).

Combustion air is via two wall louvers and associated ductwork and control dampers. Control damper actuators are not properly "linked".

A gas fired incinerator is located within the Mechanical Room.

Heating Systems (Recommendation)

Isolate the heating hot water boiler and the domestic water heater space from the back-up generator. Upgrade the combustion air system associated with these fuel burning appliances

The existing boiler, although "functioning", is at or near the end of its useful life and should be replaced.

Remove, in its entirety, the incinerator and associated venting and gas piping connections.

Air Conditioning Systems (Existing)

There are three window mounted air conditioning units...two for the large Multi-

AC Systems (Recommendation)

Provide a central air conditioning system for the entire second floor.

purpose Room and one in the Day Room. The Bunk Rooms are not provide with A/C units.

A "plug-in" dehumidifier is located in the Vault. This area is used for record storage amongst other things.

Ventilation Systems (Existing)

Apparatus Bay: The area is mechanically ventilated with a propeller wall fan. The system was described as being inadequate.

Siren/Recall System (Existing)

The siren/recall system (a compressed air system consisting of two large receivers, air compressor, and associated piping) is located in Mechanical Room. The system is used on a regular basis.

Plumbing (Existing)

A 1.5-inch water service enters the facility (through a water meter) located in Mechanical Room. Water is supplied to the heating system (as 'make-up"...through a backflow prevention device) and to plumbing fixtures located throughout the facility.

The facility is serviced with 1-inch gas pipe and gas meter located near the Mechanical Room. Gas is provided for the boiler, water heater, back-up

The second floor system could be served by a single, curb mounted packaged machine located on the flat roof (on the back-side) of the facility.

Provide a separate system for the first floor Watch Room.

Ventilation Systems (Recommendation)

Apparatus Bay: Provide a "vehicle" exhaust removal system (overhead rail design, direct connect to apparatus, with roof fan - similar to PlymoVent or equivalent).

Rest Room/Janitors Closet: Provide ventilation as required to meet applicable codes.

Siren/Recall System (Recommendation)

A routine maintenance/service program should be adhered to in order to ensure reliable use of this system.

Plumbing (Recommendation)

The systems are adequate given the facility's current occupancy and usage.

generator and kitchen stove.

Plumbing fixtures include a urinal, water closets, lavatories, janitors sink, shower, kitchen sink, hose bibs and a drinking fountain.

Due to the age of the plumbing fixtures it is recommended that all the plumbing fixtures be replaced and reconfigured to improve the space and storage.

Domestic Hot Water System (Existing)

The domestic hot water for the facility is located in the Mechanical Room. The water heater has a 50 gallon storage capacity. The heater is natural gas fired with an input rating of 39,999 BTUH. The heater is relatively new (2002) and in good condition.

Domestic HW System (Recommendation)

The existing system is adequate given the quantity of plumbing fixtures. If future renovations include the addition of fixtures (showers, toilets, lavs, etc.) a heater having greater storage and input capacities would be required.

Floor Drains (Existing)

Floor drains are provided in the Apparatus Bay. Town of Acton Health Department investigated the feasibility of connecting the floor drains from this facility into a gas/oil separator and then into the public sewer. Using this method the facility could be used as a wash bay for municipal equipment. Proposal and estimated cost was provided by NorthWest Excavating, LLC.

Floor Drains (Recommendation)

If the Apparatus Bay is frequently used for vehicle "wash-down" purposes, a gas, oil, and sand interceptor/separator should be considered. Systems should comply with the requirements of 310 CMR 30 and 314 CMR 5.

Fire Protection (Existing)

The facility does not have sprinkler protection.

Fire Protection (Recommendation)

Provide sprinkler protection for the entire facility. System designed, installed, tested, and maintained in accordance with NFPA.

Electrical Systems

Most of the electrical system is original 1960's wiring and equipment with some surface conduits and exposed wiring installed over the years to some newer or replacement equipment. With the interior wall made of metal lath and plaster running wiring hidden is very difficult.

The following is a description of the buildings existing Electrical Systems with their corresponding recommended upgrades

Main Underground (Existing)	Main Underground (Recommendation)
Main electric service extends underground from the utility pole at the front of the building on South Street to the electric meter main disconnect switch and main distribution panel board located in mechanical room. A pole mounted 25 kVA, single phase, 120/240V transformer serves the fire station and several adjacent buildings.	The existing 120/240V, 200A main electrical service should be replaced with a new 208/120V, 3 Phase, 4 Wire, 200A service.
Main Electrical Service(Existing)	Main Electrical (Recommendation)
Utility meter, 200A, 120/240V, 1 Phase main service disconnect switch and distribution panel are located in the Mechanical Room.	The existing 120/240V, 200A main electrical service should be replaced with a new 208/120V, 3 Phase, 4 Wire, 200A service.
Electrical Distribution (Existing)	Electrical Distribution (Recommendation)
Electrical distribution panels are original 1960's construction. Several electrical pieces of equipment have been added over time including washing machine, air compressor and unlabeled loads. All of these loads are serviced via disconnect switches located adjacent to the original panel boards. Existing distribution panels are full and there is no space for expansion.	The entire existing 120/240V distribution system should be replaced with a new 208/120V, 3 Phase, 4 Wire system. TVSS surge protection should be provided for the 208/120V electrical service.

Existing electrical equipment does not have sufficient space for maintenance. Boiler is located approx. 2 feet in front of panel boards. Additionally service water pipes, plumbing waste pipes from the bathroom above and heating hot water supply and return pipes are installed directly on the wall above the panels and transfer switch.

Air compressor for fire horn system is located in one of the corners of mechanical room. Equipment is a 3 phase unit fed from the single phase equipment via a Henry single phase to 3 phase converter. (Inductance, capacitance type converter, single phase input, 3 phase output rated 3 Hp).

Flush mounted panel located in apparatus bay is Square D (30) pole with 28 circuit breakers appears to have additional branch circuits doubled-up onto existing breakers.

Emergency Power (Existing)

Back-up power is provided by gas fired, 15kW, 1 Phase, 120/240V, ONAN generator located in mechanical room. Manual transfer switch and recently installed automatic transfer switch are located in mechanical room. An automatic transfer switch located above stand-by transfer switch is used to control generator power to panels and it was installed in 2001.

Emergency Power (Recommendation)

The existing 120/240V, 1 Phase 15kW gas generator should be replaced with a new 50kW, 208/120V, 3 Phase, 4 Wire diesel generator.

It is recommended that the diesel generator be installed outdoor in the parking lot in a weather proof sound attenuated enclosure. The skit mounted tank should have a minimum of 72 hour supply. The diesel generator is recommended since on site fuel is more reliable than the gas supply that may have a disruption.

Building Wiring (Existing)

Wiring in the building consists primarily of an original wiring with some surface conduit additions over time. Additional surface wiring has been installed to motorize door openers and to specialized apparatus.

Existing apparatus bay doors to the street include (2) relatively new door openers.

Exterior Lighting (Existing)

Site lighting includes a pole mounted light fixtures located at the front and back of the building. Rear parking lot is provided with a pair of pole mounted utility rental yard lights which include integral photo cell.

Lighting at the exterior of the building includes (2) sets of incandescent flood lights at the front of the building at the top of the apparatus bay, decorative sconces located adjacent to the entry door at the apparatus bay and jelly jar type fixtures located adjacent to the exit and entry doors.

Interior Lighting 1st Flr (Existing)

Apparatus area lighting includes surface, fluorescent, 8 ft. fixtures with (2) single T-8 lamps, electronic ballasts and fiberglass bodies and acrylic lenses. Fixtures are installed in an orientation and location that appears to provide adequate lighting at the day time. No measurements taken during the day time or after dark.

Janitor closet and utility rooms in the

Building Wiring (Recommendation)

The entire electrical wiring system throughout the building should be replaced. It would be recommended that surface mounted raceways similar to Wiremold with separate 120V and telephone / data wiring be provided throughout the facility

Exterior Lighting (Recommendation)

Exterior lighting should be replaced with new energy efficient fixtures that are decorative historic reproductions and meet the Town's exterior lighting zoning requirements.

The lighting of the exit doors must be coordinated with the emergency lighting requirements for exit door discharge.

Interior Lighting 1st Flr (Recommendation)

As part of the complete renovation of the Fire Station it is recommended to replace all the light fixtures with high quality energy efficient fixtures.

Occupancy sensors shall be provided for all areas to shut lights when not needed.

First floor watch room / dispatch room should have dimmable fluorescent light

building have not been retrofit. Janitor closet includes incandescent lamp holder with original pilot light type toggle switch.

Office lighting on the first floor includes surface fluorescent not original appear to mid 70's.

Occupancy sensors installed on the first floor. Mechanical room occupancy sensor is not working

Interior Lighting 2nd Flr (Existing)

Lighting at the second floor open area room includes surface mounted, 4 ft. fluorescent strip fixtures with (2) T-8 lamps.

Lighting within the second level kitchen and two enclosed bunk rooms include recessed parabolic 4" deep cells fixtures with (2) f-40, T-12 lamps.

Toilet room is provided with surface mounted, wraparound fluorescent fixtures.

Lighting controls appear to be original older snap toggle style switches.

Emergency Lighting (Existing)

Emergency lighting in the building consists of wall mounted battery units with 2 or 1 heads. The apparatus room emergency lighting includes surface mounted double head with battery unit with remote head located in mechanical room. No emergency lighting provided in toilet room and shower/bathroom or at the exterior of each exit doors.

fixtures.

Interior Lighting 2nd Flr (Recommendation)

Some interior lighting on the second floor is going to be replaced with energy saving fixtures in accordance with NStar program.

As part of the complete renovation of the Fire Station it is recommended to replace all the light fixtures with a high quality energy efficient fixture.

Occupancy sensors shall be provided for all areas to shut lights when not needed.

The day room and bunk rooms should have dimmable fluorescent light fixtures.

Emergency Lighting (Recommendation)

Selected interior light fixture and exterior light fixture along the path of egress and discharge shall have an integral self testing battery unit in accordance with NFPA 101 and NFPA 111 requirements.

Exit signs are old but lit.	Exit signs shall have LED lamps and self testing battery unit
Devices (Existing)	Devices (Recommendation)
Wiring throughout the building includes limited quantities of receptacles. Location and quantities not sufficient for a modern equipment needs.	Additional receptacles should be provided throughout the building.
Receptacles located above the kitchen counter top are not GFI type	Kitchen counter outlets should be replaced with GFI type receptacles.
Receptacles located at apparatus bay are replaced with GFI type. Ceiling mounted twist lock and strait blade receptacles provide drop cord opportunities to serve apparatus equipment.	Outlets should be replaced with GFI/WP type. Retractable cord reel type receptacles around the trucks is recommended.
Telephone / Data (Existing)	Telephone / Data (Recommendation)
Existing phone service comes to the building to the building to the backboard area underground in PVC pipe. Conduit is undersized for modern telecommunication requirements.	Complete replacement of communication system should be provided throughout the building. CAT 5E wiring and pathways should be provided for each desk and table area throughout the building.
Cable TV outlet located in day room.	
Lighting Protection (Existing)	Lighting Protection (Recommendation)
Lighting protection system provided for the building appears to be part of the original construction. The lightning rods are 12" type with original down leads connections and splices.	Replacement of the system is recommended given the age of the system and modifications that occurred over time. System should be replaced with a new system of roof perimeter mounted points, down leads and grounding per NFPA 780 and UL requirements.

Fire Alarm System (Existing)

Existing building fire alarm system consists of minimal hard wired smoke detection at the interior stairs. A surface mounted fire alarm Street box (not connected to interior building fire alarm system) and red beacon are located at the front exterior of the building.

The facility has no cental fire alarm system, therefore no speaker/strobe units, no pull stations within the building, and no smoke detectors at the sleeping quarters as required by NFPA 72 and NFPA 101 are provided.

Fire Alarm System (Recommendation)

A new fully addressable Fire Alarm Detection and Alarm System with voice controls shall be provided in accordance with NFPA 72.

Security System (Existing)

The building has no security system.

Security System (Recommendation)

It is recommended that a complete security system be provided including card readers at the doors, motion detectors and cameras (doors and exterior).

Paging System (Existing)

The building has a limited paging system and is not connected to the telephone system.

Paging System (Recommendation)

It is recommended that a complete interior and exterior paging system connected to the telephone system be provided.

Traffic Warning Light (Existing)

The facility does not have a traffic warning light at the street.

Traffic Warning Light (Recommendation)

Provide a traffic warning light at the street.

Architectural Work Scope

The following Architectural work scope items are required to implement the mechanical and electrical items identified above:

Kitchen (Existing)

The kitchen cabinet and layout is original 1960's residential quality and has not held up to the constant use. All the appliances and sink should be replaced.

Kitchen (Recommendation)

It is recommended to reconfigure the kitchen, improve storage space and install commercial grade appliances. Ventilation is required over the stove.

Bathrooms / Shower (Existing)

The bathroom / shower rooms layout is original 1960's. The material and condition of the plumbing fixtures make it very difficult to clean. The toilet room is currently used as a storage room.

Bathrooms / Shower (Recommendation)

It is recommended to reconfigure the bathrooms, install new fixtures and improve storage space in the area.

Windows (Existing)

Double hung widows are original. All the windows have been retrofitted with aluminum combination storm / screen units that take away from the historic character of the building.

Windows (Recommendation)

Replace the old windows with energy efficient double hung windows that match the historic character of the building.

Exterior Doors (Existing)

Exterior doors are show their age with rot and swelling along the bottom edge.

The glazed "storefront" entrance door was entirely replaced in winter 2003 .

Exterior Doors (Recommendation)

Replace all the exterior doors with new energy efficient decorative historic reproductions.

Overhead Doors (Existing)

Overhead doors are un-insulated wood style and rail type with glazed panels at eye level.

Overhead Doors (Recommendation)

Replace all the overhead doors with new energy efficient decorative historic reproductions.

Interior Painting/Repair (Existing)	Interior Repair (Recommendation)
Interior ceilings and walls have some plaster damage from previous roof leaks.	Paint and repair all interior walls and ceilings.
Vinyl floor tiles on the second floor are cupped and broken.	Replace and upgrade all flooring.
Crack in the interior masonry separation wall between the lobby and apparatus bay.	Test for asbestos in interior materials.
The 2' concrete floor topping slab in the southeast corner has a 3' crack above a panel joint in the precast hollow core plank.	
Apparatus Bay Floor (Existing)	Apparatus Bay Floor (Recommendation)
Several large cracks in Apparatus Bay Floor.	Repair cracks and epoxy paint the Apparatus Bay and Mechanical Room floors.
Exterior Painting/Repair (Existing)	Exterior Repair (Recommendation)
No known insulation in the exterior walls.	Install blown in insulation in the exterior and interior walls.
Stucco finish is in good condition with typical cracks and stains.	Repair exterior cracks and paint the entire exterior.
Roof Drainage (Existing)	Roof Drainage (Recommendation)
Roof noted in previous reports to have considerable ponding of water due to poor roof drainage	Repair roof drainage.

Cost Estimates

The estimated cost to perform the work described in this report is as follows:

LINE ITEM		QUANTITY		PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
		NUMBER OF UNITS	UNIT MEASURE		
MECHANICAL					
M1.	Upgrade Combustion Air System	1	LS	$2,000.00	$2,000.00
M2.	New Larger Cast Iron Boiler	1	LS	$28,000.00	$28,000.00
M3.	Remove Incinerator	1	LS	$2,500.00	$2,500.00
M4.	Central Air Conditioning System (5 to 7.5 Tons), including ductwork and insulation.	1	LS	$26,500.00	$26,500.00
M5.	Independent AC System Watch Room	1	LS	$3,500.00	$3,500.00
M6.	Vehicle Exhaust System	4	EA	$18,500.00	$74,000.00
M7.	Kitchen Hood Exhaust System	1	EA	$500.00	$500.00
M8.	Bathroom Exhaust Fans, Grilles, and Ductwork	1	LS	$2,000.00	$2,000.00
SUBTOTAL - MECHANICAL					$139,000.00
PLUMBING					
P1.	Replace Toilets	4	EA	$1,050.00	$4,200.00
P2.	Replace Showers	2	EA	$2,500.00	$5,000.00
P3.	Replace Bathroom Lavatories	4	EA	$650.00	$2,600.00
P4.	Replace Kitchen Sink / Garbage Disposal	1	EA	$1,250.00	$1,250.00
P5.	Larger Domestic Water Heater	1	LS	$2,500.00	$2,500.00
P6.	Interceptor/Separator & Floor Drains (Apparatus Bay)	1	LS	$20,500.00	$20,500.00
SUBTOTAL - PLUMBING					$36,050.00
FIRE PROTECTION					
FP1.	Sprinkler Systems	1	LS	$15,000.00	$15,000.00
SUBTOTAL - FIRE PROTECTION					$15,000.00

LINE ITEM		QUANTITY		PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
		NUMBER OF UNITS	UNIT MEASURE		
ELECTRICAL					
E1.	Main Electrical Service Upgrade	1	LS	$15,000.00	$15,000.00
E2.	Replace Electrical Distribution Panels	7	EA	$4,500.00	$31,500.00
E3.	100% Emergency Generator (50kW) / ATS	1	LS	$35,000.00	$35,000.00
E4.	Wiring / Wiremold	310	LF	$6.50	$2,015.00
E5.	Exterior Lighting - Building Historic	18	EA	$350.00	$6,300.00
E6.	Exterior Lighting - Pole Historic	4	EA	$3,500.00	$14,000.00
E7.	Interior Lighting	63	EA	$250.00	$15,750.00
E8.	Emergency Lighting	32	EA	$125.00	$4,000.00
E9.	Devices	63	EA	$175.00	$11,025.00
E10.	Telephone / Data / Cable TV	18	EA	$175.00	$3,150.00
E11.	Lightning Protection / Grounding System	1	LS	$10,500.00	$10,500.00
E12.	Fire Alarm System	1	LS	$15,500.00	$15,500.00
E13.	Security System with two Card Readers	1	LS	$8,500.00	$8,500.00
E14.	Security System Camera	7	EA	$1,500.00	$10,500.00
E15.	Paging System Speakers and Amplifier	30	EA	$150.00	$4,500.00
E16.	Traffic Warning	1	LS	$7,000.00	$7,000.00
E17.	Remote Dispatch Upgrade	1	LS	$50,000.00	$50,000.00
SUBTOTAL - ELECTRICAL					$244,240.00

LINE ITEM		QUANTITY NUMBER OF UNITS	QUANTITY UNIT MEASURE	PER UNIT COST INCLUDING SUB'S O.H. & PROFIT	TOTAL COST
ARCHITECTURAL					
A1.	Renovate Kitchen	1	LS	$18,500.00	$18,500.00
A2.	Renovate Bathroom / Shower / Toilet Room increase storage	1	LS	$10,000.00	$10,000.00
A3.	Replace Windows Historic	20	EA	$850.00	$17,000.00
A4.	Replace Exterior Doors Historic	5	EA	$1,250.00	$6,250.00
A5.	Replace Overhead Doors Historic	4	EA	$4,500.00	$18,000.00
A6.	Test For Asbestos	1	LS	$5,000.00	$5,000.00
A7.	General Interior Painting / Repairs	1	LS	$35,000.00	$35,000.00
A8.	Interior Flooring	2,200	SQFT	$8.00	$17,600.00
A9.	Apparatus Bay / Mechanical Room Floor Repair	3,000	SQFT	$3.50	$10,500.00
A10.	General Exterior Painting / Repairs	1	LS	$15,000.00	$15,000.00
A11.	Roof Drainage	1	LS	$6,500.00	$6,500.00
SUBTOTAL - ARCHITECTURAL					$159,350.00
SUBTOTAL - SUBCONTRACTORS					$593,640.00
GENERAL REQUIREMENTS			10%	SUBTOTAL	$59,364
CONTRACTORS FEE			10%	SUBTOTAL	$65,300
DESIGN FEE			12%	SUBTOTAL	$86,197
CONTINGENCY			10%	SUBTOTAL	$80,450
TOTAL ESTIMATED CONSTRUCTION COST (AUGUST 2004)					$884,951
Note:	The above estimated construction costs reflect current August, 2004 pricing and are based upon conceptual square foot values and sizing without the benefit of formal design. Currently, it is recommended that a normal escalation factor of 12.5% (exclusive of material spikes) be applied to the Total Current Estimated Cost to reflect construction in mid 2007.				
TOTAL ESTIMATED CONSTRUCTION COST (JUNE 2007)					$995,570

The above 2004 costs is an order of magnitude since a detail design has not been done.